

REMARKS

The holding of allowable subject matter is gratefully acknowledged.

Claim objections

Claims 12, 24, and 36 have been amended as requested by the Examiner. Applicants respectfully submit that -- since these changes are purely pedantic in nature -- they do not narrow the claim scope and, if anything, broaden the claims.

Rejection under section 101

The rejection is respectfully traversed. Claim 1 recites a method to be performed in at least one data processing device. Data is retrieved into a first format using a first annotated schema and then into a second format using a second annotated schema. These are functions that are performed in a data processing device. This is not merely descriptive, because data formats are useful things. For instance, claim 2 recites that the first format comprises at least one XML document. XML is a useful format. Being able to retrieve into a useful format is a function, not mere description. Mere description would be text such as "Once upon a time in a land far away, there was a handsome prince." Applicants do not claim such mere description.

Claim 37 recites a medium embodying code readable by at least one data processing device. The medium embodies code. The code includes a schema and annotations. The schema is adapted to create all possible document types for use with a single electronic document specification language. The annotations are adapted to guide retrieval of data, to specify a particular output document. These are most emphatically functional and not descriptive recitations.

The other dependent claims recite additional functional matter. For instance, claim 9 recites that the data source comprises heterogeneous data bases. It is a function to be able to retrieve from heterogeneous databases into a format.

Applicants respectfully submit that the Examiner's contention that these are descriptive recitations is without basis in law.

Rejection under section 112

Applicants do not understand what the Examiner is talking about with this rejection. He seems to be reading limitations into claim 45 from other claims. For instance, the first and second formats, which appear in claim 1, are not in claim 45, nor are they in the independent claim -- 42 -- from which claim 45 depends. Also, no "data structure" is recited in either claim.

Claim 42 recites a method for depositing data. A specification for deposit is received. The specification is processed in accordance with an annotated schema. Responsive to the processing, data is deposited in accordance with a local format. When claim 45 says the annotated schema is reversible, this recitation refers back to the operation that uses that annotated schema. This means that data can be taken from the "local format" into however the specification specifies data.

To the extent that the claim reads on more than one embodiment, which seems to be what the Examiner is saying, Applicants respectfully submit that that is their prerogative, to write a claim to read on more than one embodiment.

The rejection is accordingly respectfully traversed.

The other rejected claims in this section are similar.

### Art rejections

The art rejections are respectfully traversed.

Since the references are many and/or complex, Applicants will confine their remarks to those portions of the references cited by the Examiner, except as otherwise indicated. Applicants make no representation as to the contents of other portions of the references.

The prior comments are incorporated by reference and supplemented as follows:

#### Dates

The present application has been amended to make it a C.I.P. of the co-pending application that contains a common inventor with the present application. The prior application also mentioned annotated DTD's. Rule 131 declarations have been filed in that application. In view of the dates in the prior application. It is not clear that the references are prior art. However, as shown below, they fail to teach or suggest the claimed invention in any case.

#### Do the references show an annotated schema?

Claim 1 recites a method comprising executing operations on at least one data processing device. The operations include first and second retrieving. Each retrieving step uses an annotated schema. It is therefore clear here that the annotated schema is something that can be used by a data processing device.

As pointed out before, the specification contains the following definitional section at the bottom of page 6:

Herein, the following definitions will be used. A data source or document "schema" describes the structures and types for data or documents. An "annotation" furnishes the schema with mapping functions that connect data from heterogeneous data sources and target data segments.

Applicants would like to review the preferred embodiment briefly, just to make sure that the Examiner understands the intended concept. Fig. 2C shows a partial DTD. A DTD is an example of a schema. DTD's are used inside data processing devices to describe structures and types for data or documents, particularly XMI, data or documents. Fig. 10A shows an *annotated* DTD. This *annotated* DTD has been *furnished* with mapping functions, such as the one shown at 1006. The *furnishing*, like furniture in a home, is inside the DTD. The mapping function in this example can be used by the data processing device, because it is a type of programming code inserted into the DTD. Merely providing mapping functions in a separate program would not be an *annotation*.

Applicants hope that this illustration will help the Examiner see how the references fail to teach or suggest the claimed invention. It is not entirely clear to Applicants how the Examiner thinks the references teach or suggest any annotated schema. It appears extent that the Examiner may have been reading the claim language on mapping functions that are external to some schema in the reference. If so, Applicants respectfully submit that this is an unreasonable interpretation of the claims in light of the plain meaning of the language in conjunction with the definition, specification, and drawing. Nevertheless, new claims 84-90 specifically state that the annotations are inserted into the schema, in an effort to advance prosecution.

The Examiner points to EXTOI., p. 6, par. 2 --- X12 and EDU'ACT -- as schema. These two items appear from the reference to be printed standards. It is unclear from this reference how the printed standards documents could be furnished with mapping functions, or how the printed documents could be used in a data processing device for retrieval operations as recited in claim 1.

Perhaps the Examiner is thinking of something in these standards that he believes relates to the claims, but then he should cite the standards themselves so that Applicants can review them, rather than citing a reference that merely mentions standards. Applicants respectfully submit that printed standards at least as summarily mentioned in this cited portion of this reference do not teach or suggest an annotated schema as recited in claim 1.

The Examiner also points to p. 13, first par. of Xedi for a schema. This portion of the reference appears to refer to the abstract idea of rules and structure, not an actual schema that can be used in a data processing device for retrieval operation or furnished with a mapping function. Abstract ideas cannot be furnished with mapping functions or used in a data processing device. Applicants accordingly respectfully submit that the mere idea of rules and structure as set forth in this cited portion of this reference fails to teach or suggest the use of an annotated schema in a method, as claimed by Applicants.

The Examiner then points to a dictionary described in the second paragraph of p. 13 of Xedi. The reference does not say what is in this dictionary. That appears to relate to something that may be described elsewhere, possibly in printed standards. Accordingly, it is not clear to the undersigned that this dictionary would constitute a schema as they have defined that term.

However, assuming *arguendo* that the dictionary were a schema, it is not clear how the dictionary itself could be considered "annotated," i.e. furnished with mapping functions. Instead, it appears that the dictionary is used by another program to effect a translation. Moreover, the Examiner even admits the dictionary is furnishing mappings somewhere else, rather than demonstrating that the dictionary has been furnished with any mappings. Applicants therefore respectfully submit that the Examiner is mischaracterizing the reference and using impermissible hindsight in light of Applicants' disclosure.

All of the independent claims are similar to claim 1 in that they recite at least one annotated schema, though they are different in other respects.

Level of disclosure of the references

The references all appear to be high level discussions of results rather than implementations. While the authors describe these results, they do not describe them at a sufficiently detailed level so that one may understand what was done. Accordingly, it is impossible to determine whether the various systems described are actually combinable as the Examiner proposes. Software systems are complex, often requiring thousands or even millions of lines of code to implement. High level articles like this do not provide sufficiently detailed or enabling disclosure to allow one of ordinary skill in the art to create such a hybrid system.

Applicants accordingly respectfully submit that these articles cannot be combined as the Examiner is doing without impermissible hindsight in light of Applicant's disclosure and/or undue experimentation.

Claims 4, 8, 16, 20, 28

These claims depend from claims 1, 13, and 26. Those independent claims recite first and second retrieving. The first retrieving is from a data source to a first format. The second retrieving is from the first format to a second format. The rejected dependent claims recite that these retrievings are both done with the same type of software engine.

Against these limitations, the Examiner says that XEDI is used both to/from X12 EDI and to/from XML. In other words, XEDI is used from a first format to a second format, and from the second format back to the first format. That is not what the claim recites. The first and second

retrievings cannot be back and forth from the same things, because the claim recitations are distinct. In the claims, the data source is recited distinctly from the first format, which in turn is distinct from the second format. Applicants accordingly respectfully submit that the Examiner's reading of the claims here is not reasonable.

Claims 45-47, 56-58, 67-69

These claims relate to reversibility of the annotated schema. As far as Applicants can tell from the portions of EXTOL cited by the Examiner, this document only teaches to go back and forth between XML and EDI. This hardly teaches or suggests that an annotated schema could be used for both. Apparently, the Examiner only cites Abjanic for a similar proposition to the EXTOL citation, i.e. merely that it was desirable or known to convert back and forth. The fact that it might have been known to do something does not mean that that a particular way of doing that thing was necessarily known or obvious.

If the Examiner will look at Applicants' rather extensive disclosure, including elaborate grammar of the mapping language used to make the DTD's so that that the mapping language would cover all types of situations encountered in DTD's, the Examiner will have to admit that making the annotated schema reversible was far from obvious. It required extensive and undue experimentation, even if those of ordinary skill in the art might have known or suspected that translation was desirable in both directions.

This is especially true since annotated schema were neither taught nor suggested by either the XEDI or the EXTOL reference, as explained above.

Claims 50, 61, and 72

In his response to argument, the Examiner adds a new reference, a definition of "repository" from Wikipedia, without adding this reference to the rejection. Applicants respectfully submit that this is improper.

However, even given this reference, Applicants are not understanding the point here. P. 3, par. 1, cited by the Examiner says that x12 is "a relational database."

The section on p. 5, par. 3, says that EDI "objects" can be either passed or dynamically referenced to objects stored in repositories. This appears to add a third layer to the processing here, where EDI objects in turn relate to repositories, rather than the relational databases of p. 3, par. 1. It is not clear how this third layer relates to the claimed invention.

Moreover, the Wikipedia article only says that repositories "can" be multiple databases, not that they necessarily are. Therefore it is not at all clear that the article in question is purporting to have found any solution for multiple relational databases.

In any case, all of these are broad, sweeping statements without any specific teachings of how the anything is implemented. Given the high level nature of this article, it is not at all clear what is going on or how it could be combined with the other articles

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The Examiner's other rejections and/or points of argument not addressed herein would appear to be moot in view of the foregoing. Nevertheless, Applicants reserve the right to respond to those rejections and arguments at a later date. No arguments are waived and none of the Examiner's statements are conceded.

Applicants do note, however, that some of the claims stand rejected over improbably long lists of references that could only have been cobbled together via impermissible hindsight in view of Applicants' disclosure and claims.

Applicants respectfully submit that they have demonstrated the claims to have been rejected in error. Allowance is accordingly respectfully requested.

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Respectfully submitted by,

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2/17/2006